Spring 2022 EE214 Experiment 4
Impedance Measurement and Complex Power

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April 29, 2022

Contents

1 Introduction

2 Experimental Results and Discussion

The results of the experiment are discussed in the following steps.

2.1 Step 1

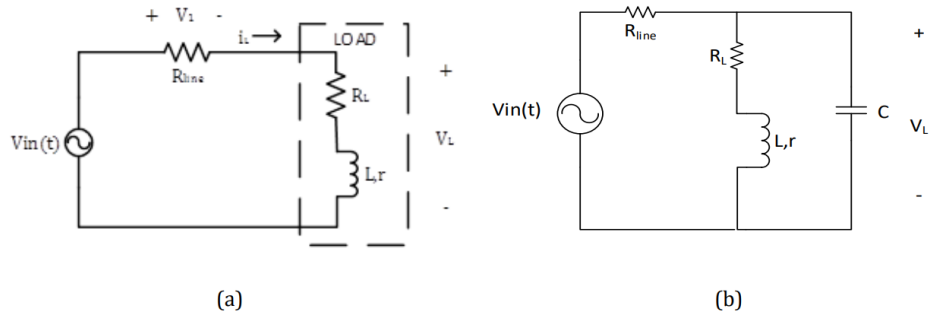

Figure 1: Circuit schematic for the step 1

2.1.1 a.

2.1.2 b.

2.1.3 c.

2.1.4 d.

Table 1: Power Measurements

Part	V_{in}(Vrms)	V_{line}(Vrms)	V_{Load}(Vrms)	i_{Load}(mArms)	ϕ_{Load}(degree)	ϕ_{in}(degree)
a.						
b.						
c.						

Table 2: Power Calcuations

Part	P_{in}(mW)	P_{line}(mW)	P_{Load}(mW)	Q_{Load}(mVAR)	$\|S\|_{Load}$(mVA)
a.					
b.					
c.					

Table 3: Load Parameters

Part a. (Load)			Part b. Load			Part c. Load		
pf	lead/lag	eff %	pf	lead/lag	eff %	pf	lead/lag	eff %

2.2 Step 2

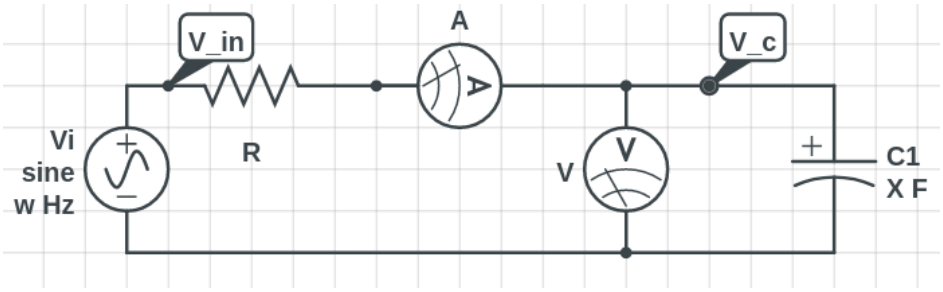

Figure 2: Circuit schematic for the step 2

2.3 Step 3

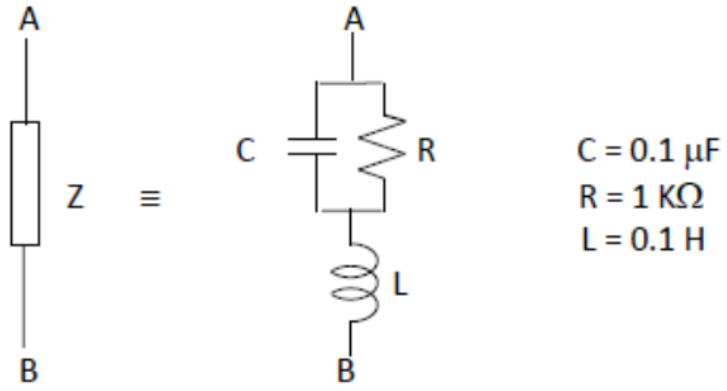

Figure 3: Circuit schematic for the step 3

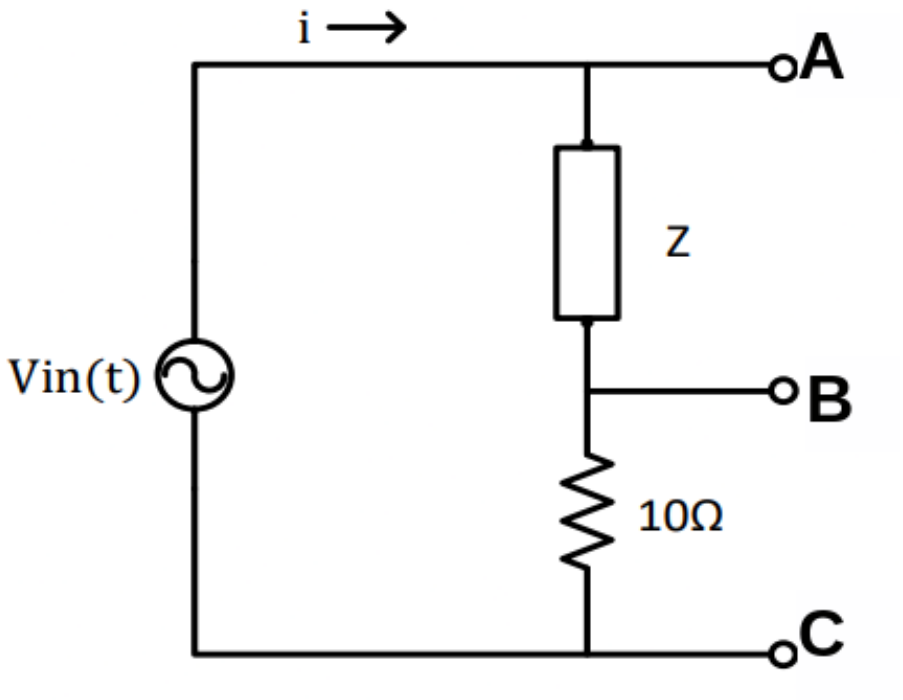

Figure 4: Outside circuit schematic for the step 3

3 Conclusion

Appendix A

- PreLab Preparation 3 hours
- Experimental Work 2 hours
- Report Writing 8 hours